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ON SO-CALLED "ULCERATIONS" OF THE OS UTERI.[1]

BY CLIFTON E. WING, M. D.

It has fallen to my lot, as assistant at the New York Hospital for Women, and as a specialist, to have under observation a large number of patients who have been treated at one time or another for so-called "ulcerations of the womb." The histories of these cases, coupled with the fact that the chapters upon the subject in the various text-books of the diseases of women are unsatisfactory, tending to mislead rather than to assist the student to an appreciation of the true condition, have led me to think that a few words concerning the affection might not come amiss. The time at my disposal will not allow of any attempt to give the history of the subject, nor shall I quote extensively from what has been written. I shall try simply to present some practical truths, prefacing my remarks with a statement that I claim nothing whatever as original. The facts were all explained and demonstrated to me by the gentlemen under whom I have served, and repeated observations have confirmed their correctness.

What is commonly considered and treated as ulceration of the womb is not ulceration at all, but one of two conditions, both of which, once clearly understood, are simple enough. In the first condition, frequently found in its typical form in women who have not borne children, and where the cervix and os retain the normal shape, there is seen a red abrasion often entirely encircling the os; it is occasioned by the irritating discharge poured out by a uterus affected with catarrh, or, as is commonly said, endometritis. We all know how often comes a so-called cold in the head, with its accompanying discharge from the nose; the uterine mucous membrane is liable to a similar catarrhal discharge. The woman affected with a discharge from the nose removes it by the use of the handkerchief, and so prevents it from excoriating the upper lip and the edge of the nostril; if the discharge is still sufficiently irritating or excessive to cause some excoriation, perhaps the use of the handkerchief is supplemented by an application of cold cream or other unguent to the

[1] Read at the meeting of the Norfolk District Medical Society, January 11, 1876.

part. Now let the same woman, from, it may be, the same cause, have a uterine catarrh. She cannot keep the irritating discharge constantly removed from the surface of the cervix uteri, nor can she practically apply any unguent; and the end of the cervix in that woman is soon in the same condition as the upper lip and nostril of the little ragged boy who runs about the street on a wintry day, having no handkerchief to use and no cold cream to apply: namely, the epithelium is removed, and a raw, excoriated surface comes to view.

Catarrh of the uterus has generally become chronic before the patient applies to the physician, and the papillæ at the abraded spot, as a result of long-continued irritation, frequently have become much hypertrophied, and deceive the inexperienced eye into diagnosticating granulations. Too often, additional irritation is caused by the physician, who, totally misunderstanding the case, hastens to cure the "ulcer" by lunar caustic or his other "favorite application." What educated physician would think of attacking the excoriated nostril and upper lip referred to by "burning out the 'ulcer,'" giving no attention to the catarrh, its cause? Why should we do the same thing in exactly the same condition in another part of the body? If the discharge be stopped by proper applications to the inner surface of the uterine cavity, the so-called "ulceration" will take care of itself; for you may depend upon it that if you are not more skillful than most physicians in making your application, enough will be spilled upon the excoriation outside to stimulate that part sufficiently.

The other condition mistaken for ulceration is "rupture of the cervix with eversion." It is important that this be understood correctly, as many able physicians, and specialists even, have failed entirely to recognize the real trouble or its proper treatment, and it explains those cases which have been described as "severe ulcerations which require active treatment," wherein the strongest acids and caustics, the actual cautery, and even amputation of the cervix have been tried in misdirected attempts to bring about a return to a normal state. Dr. Emmet was the first to recognize and describe the true condition in this disease, and to invent and practice the operation for its radical cure. To him we are indebted for one of the most important steps which modern gynæcology has taken in its march of improvement.

Rupture of the cervix uteri occurring in labor is generally thought to be rare, and to an extent sufficient to attract the attention of the accoucheur by symptoms is so, but it occurs in a less degree in a large proportion of childbirths. As pointed out by Dr. Emmet, if the rupture be anterior or posterior to the os, the side walls of the vagina tend to hold the torn surfaces together, so that union usually occurs; but if it takes place laterally from the os, the rupture tends to gape, the posterior lip being held back by resting against the posterior wall of the

vagina, while the anterior lip shoves forward in the axis of the vagina. This can be made clearer by a diagram. (See Fig. 1.) The dotted lines show the result of a rupture which has taken place on both sides of the os, as is quite common, as high as A. The tissue between A and B, which formed the normal conical cervix, is divided by the rupture into two parts, which separate as described, the posterior lip rolling backward and the anterior lip forward. The conical shape of the cervix is entirely gone, and the bright red membrane, from A to B, which was the lining of the cervical canal, is rolled out and brought to view. The condition is analogous to that of ectropium where by the rolling outward of the lid the bright-red conjunctiva is seen.

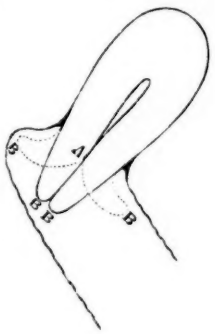

Fig. 1.

Now let any physician who does not understand the condition examine with a speculum, and what does he see? Instead of the small, conical cervix which he has expected would fall readily into the end of his speculum, he finds a condition of things which startles him. With his largest speculum he cannot command a view of the whole cervix. (See Fig. 2.) The anterior and posterior lips, as he sees them spread out, while he thinks he is looking at their ends only, seem to him wonderfully hypertrophied. This appearance of hypertrophy, which is so nicely produced by eversion, may be demonstrated by any one by simply standing before a mirror and observing the lips in their usual position when the mouth is closed; then noticing the appearance produced by forcibly everting them, the upper lip being rolled up toward the nose and the lower lip being pulled down toward the chin; the apparent hypertrophy vanishes astonishingly when the lips are allowed to regain their normal position. The cervix soon becomes so flattened out that traces of a rupture are not visible to an untrained eye, and the observer sees what he has no doubt is the external os, but what in reality is the opening of the canal at the level of the upper limit of the rupture (A, Fig. 2). All about this opening he sees a large extent of red, raw-looking surface, nothing more nor less than the mucous membrane of the canal rolled outward as above exp'ained, its bright color contrasting with that of the vagina and external surface of the cervix almost as markedly as does the color of the mucous membrane of the mouth with that of the skin; but as the external os is thought to

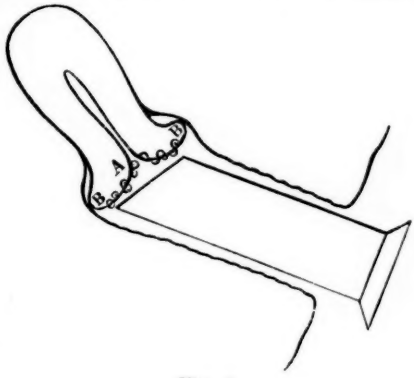

Fig. 2.

be before the eye, the diagnosis of a hypertrophied cervix with ulcerations seems to be clear. Let any one evert the lips before a mirror as noted above, and see how readily the healthy red mucous membrane, with its little irregularities of surface, might appear, to one *expecting* to see inflammation and ulceration, to be in such condition, and it is easy to understand how the physician who all his life has heard of ulcerations of the uterus is liable to be misled.

Moreover, this eversion of the mucous membrane is often enough to give rise to a catarrhal discharge from the canal, if this is not present already. Such a discharge will produce excoriation here more readily than when the cervix is in its normal shape. In the everted mucous membrane the glandulæ nabothi frequently become enlarged, and degenerate into cysts, some on the surface, others deeper; this is another condition which is mistaken for granulations.

In a recent case, as marked as that represented in Figure 2, where the rupture has taken place on both sides of the os and extended well up, the diagnosis would be comparatively easy. Let it not be supposed that it is always so. The rupture may take place on one side only, and be small in extent, yet cause much rolling out. In old cases all traces of it are effaced by the flattening out of the cervix on the posterior wall of the vagina, and when seen, perhaps the mucous membrane, by the formation and bursting of the little cysts, or it may be by the applications it has received, has become hard and fibrous. The amount of eversion depends much upon the extent of the rupture at the external os. A rupture which is limited here but extends upward along the uterine canal will not cause much eversion, but will give an open, patulous canal, a condition often met with, and puzzling to one who does not understand its cause.

I said at the beginning of the paper that the text-books tend to mislead the student. It may be well to call attention here to one of the latest of these, Thomas on the Diseases of Women, and note to what extent the author affords illustration of the prevalence of the error of diagnosis referred to.

On page 289, in the discussion of hypertrophy, or, as he calls it, "hyperplasia," the author says, "It is astonishing to what an extent enlargement of the cervix as a result of areolar hyperplasia will go. Sometimes this part will equal in size a very small orange, and, filling the vagina, will compress the rectum to such an extent as to interfere with its functions." And again, on page 299, he states, "As I have before remarked, interference with that retrograde metamorphosis of the puerperal uterus which is now styled involution is in the great majority of cases its cause. Surprise may for this reason be excited by the assertion that of all forms of the affection the cervical variety is the most frequent." If this were true, it would be a curious fact that the body of the uterus,

where so much involution is necessary for its return to its former size, should be so much less liable to the trouble than the cervix, where so little is necessary. He has confounded, in his description, the apparent hypertrophy of an everted cervix with the true enlargement of hyperplasia. It is interesting to read further and see the attempt at a plausible explanation of these conditions.

On page 291 the author remarks, "The reason for this is to be found in the facts that cervical endometritis, which in multiparous women proves a not infrequent source of the disorder, is more common than the kindred affection of the body; that the cervix is peculiarly exposed to mechanical injury from coition, friction against the vaginal walls, and laceration occurring during parturient distention; that after childbearing the connective tissue at this point is looser and more permeable than that of the body, and that when involution is retarded for some months and then is accomplished, it sometimes takes place in the body but fails to do so in the neck from that exposure to injurious influences which has just been alluded to. The body of the uterus is so completely removed from contact with mechanical agencies outside of the abdomen that this part of the organ, as already stated, is not so frequently affected by hyperplasia as the corresponding tissue of the cervix." He here speaks of laceration of the cervix; and again, on page 298, he writes, "Laceration of the cervix and exposure of the delicate walls of the cervical canal to friction against the vagina is so frequently not only a concomitant circumstance, but also, I think, a cause of this condition, by interfering with involution, that it should always be looked for." After discussing the diagnosis and the operation, he concludes as follows: "Such an operation will often have a most happy effect upon the uterine disorder; nervous irritability will disappear, and nutrition become greatly improved, by the removal of this focus of irritation." In all this the author fails to see that, if his operation has been performed properly, his bugbear, hyperplasia of the cervix, has gone.

The diagram of what our author terms cystic or follicular degeneration of the cervix[1] is an excellent representation of what is seen on examining through a speculum a case of rupture and eversion. What is drawn as the external os is really a part of the canal; traces of the rupture are seen in the slit-like shape of the os. The gland cysts are situated upon the everted mucous membrane, and not upon the external surface of the cervix, as the author describes them. His whole text upon the subject is wrong. If he will take tenacula and simply draw the lips together, he will restore the os uteri to its proper position, and will carry the follicles back to their proper place in the canal, and will never find it necessary to amputate the cervix by either the scissors or the galvano-caustic wire, as he recommends should be

[1] Figure 85, page 317, last edition.

done in troublesome cases. It is the misunderstanding of this common condition of rupture and eversion, I take it, which has led Dr. Thomas to draw that sharp separating line between inflammation affecting the tissues of the cervix and that affecting the similar tissues of the body of the uterus, a distinction which, as every histologist and every accurate clinical observer knows, is imaginary.

The only safe rule to follow is this: In case of a large cervix always examine to see if eversion be not present. In hypertrophy the cervix enlarges gradually towards the body; but, as is pointed out by Dr. Emmet, with eversion there is more or less of a neck above the everted parts, an approach to the shape of an inverted mushroom. The *practiced* finger can detect this. Try with tenacula, one on each lip, and see if they cannot be rolled inward; if there be eversion, and this be done skillfully, it will surprise any one seeing the operation for the first time to note how the great mass resolves itself into the typical conical cervix, and how on restoration of the mucous membrane to its normal place the "ulceration" disappears. Sims's speculum is here essential; the old round specula do not give room for the manipulation, and the valve specula, by distending the vagina with their branches, tend to hold the uterine lips apart.

Let it be understood that I do not deny that there is a connection between rupture of the cervix and enlargement of the womb; that rupture has a close connection with subinvolution does not admit of a doubt. The question, however, cannot be discussed here.

Emmet's operation for the restoration of the cervix consists simply in refreshing the surfaces and bringing the parts together again, retaining them there by sutures until union has taken place. Of course, care is taken to leave the uterine canal intact. The operation is best done under ether, and the patient should lie quietly in bed for several days after the sutures are removed.

For a bad case of rupture accompanied by all the symptoms which are sometimes caused by it, this is the only course to follow with prospects of much success; but in private practice many patients will not submit to operations, and it must be remembered that there are all degrees of rupture, some devoid of symptoms even. If the practitioner recognizes that the "ulceration" is the condition described, and that more or less of redness and angry look is as natural to the everted mucous membrane here as it is to the conjunctiva in ectropium, we shall see fewer bad results from the use of caustics. Now and then cases occur in which the cervix is pretty much gone, as a result of the diligence of somebody in "making applications."

I think there has been more unintentional malpractice by physicians of the better class in such cases than in any other affection of the body. A short time ago I saw a patient who had been treated by a physician

of good standing. He at first made applications of lunar caustic once a week; the "ulceration" proving rebellious, he came oftener and oftener, until the woman had a daily application for some weeks. The whole cervix was raw, bleeding on the slightest touch, while the physician was "fearful it was going to prove cancer." Dr. Emmet reports a similar case, and they are not very uncommon, for cancer is quite often suspected with this condition of eversion. With regard to applications, Dr. Emmet remarks, "The nitrate of silver in the solid form is in more common use, from its supposed mild action, than any other agent, yet from indiscriminate and too frequent use it has done more harm than any of the stronger caustics. It is not that I would so much deprecate its use in the hands of an expert, but, from its convenient form, it is too great a temptation for many who are the most ignorant to flatter themselves that they have mastered the art as a specialty when once in possession of a porte-caustique and speculum. This practice has become a scandal to the profession." [1] The stronger caustics in ignorant hands are of course worse. I have seen two cases within a year wherein there were cicatricial bands binding the cervix firmly to the vaginal wall and causing displacement, for which little could be done, and in both instances the only probable cause was the application of some caustic which had run down upon the vagina.

I would utter a caution against accepting as conclusive the statements, supported often by a report of cases, which now and then appear in the journals, that the most powerful caustics can be applied to the uterine canal up to the very fundus with wonderfully successful results and without danger. It should be remembered that the cases where this has been tried with disastrous effects never get into print. Many times when the operator thinks he has gone to the fundus he has not passed the inner os, as I have verified by observation.

As regards the choice of remedies I cannot do better than quote Dr. Emmet again: "In our selection we must use those calculated to do the least harm to the portion of the mucous membrane which may still be in a normal condition. Rare indeed is the necessity of applying, within the uterine canal, caustics, the cautery, or the strong mineral acids. It is true that these remedies act promptly, so far as to heal an erosion and to check all uterine discharge. But we cannot restore the patient to health by so far changing the character of the mucous membrane as to leave it a mere cicatricial surface. Our ultimate success will be directly in proportion to the condition in which we leave this membrane, for we will need its healthy action in the after-treatment of the case. That individual cases escape with but little damage is only due to protection afforded by the secretions; yet the practice, as a rule, is disastrous enough to deprecate their use." [2]

[1] Emmet, Philosophy of Uterine Disease, New York Medical Journal, July, 1874.
[2] Emmet, Surgery of the Cervix. New York. 1869.

Let me here point out a common error. A physician has a patient who has symptoms which he does not exactly understand, and he finally concludes to make a speculum examination; finding the cervix in the condition which we have been considering, and which he has always looked upon as ulceration, he fails to look further, thinking that he sees enough to account for all the suffering, when that which he has found may of itself be of no importance whatever. In this way I have known the worst affections of the uterus, the rectum, and the bladder overlooked. We all know of cases in which symptoms arising from disease of the most distant parts of the body have been foolishly referred to the same cause.

While decrying the ignorance which has so often led to such practice, let us not slight uterine affections. Many a uterine disease which would yield readily to treatment is neglected or not suspected, and the patient is allowed to fall unnecessarily into invalidism.

The close connection between certain cases of mental trouble and uterine disease cannot be overlooked with impunity. I do not refer to hysteria, which all know is commonly enough so associated, but to more serious affections, — cases of melancholia, monomania, and the like. I have seen such patients get well at once, when seclusion in an asylum was apparently near at hand, by simply removing the source of irritation, some uterine disease. We must try to avoid both overestimating and undervaluing the importance of uterine affections.

A RECENT THEORY OF PHOSPHORUS POISONING.

BY JAMES J. PUTNAM, M. D.

It is well known that ever since free phosphorus has been used in medicine, cases of more or less intense poisoning from therapeutic doses have from time to time been reported. Owing to this fact the drug has, perhaps not unjustly, borne a bad name amongst the profession at large.

Dr. J. Ashburton Thompson, of London, has recently suggested an explanation of the result of many of these cases, which, from the importance of the subject, seemed to call for careful scrutiny, especially as it is contained in a work of some size, for which Dr. Thompson's name and his strong advocacy of the use of phosphorus have secured a wide circulation.[1] He states, namely, that he has found that most of the cases of poisoning from a single or a few medicinal doses have occurred where the phosphorus was given dissolved in vegetable oil, and especially in almond oil. Under these circumstances, he believes, the phosphorus becomes partially oxidized into hypophosphorous acid, which he states,

[1] Free Phosphorus in Medicine. London. 1874.

on the authority of Devergie, to be itself nearly as poisonous as phosphorus, and moreover, apparently on the authority of Personne, to be capable of dissolving phosphorus with great readiness and of imparting to it a degree of virulence which it did not before possess.

If it be a fact that by avoiding these special preparations phosphorus can be given with comparative safety, it seemed highly important that it should be known, more especially as hitherto the solution in almond oil has been among the favorite preparations both in England and in this country.

To put this question to direct experimental test seemed, however, impossible, because, at the worst, the cases of poisoning, with whatever preparation, form a very small fraction of the cases in which the same preparation has proved innocuous, a fact which, by the way, must be held to invalidate the force of Dr. Thompson's reasoning. Therefore the explanation suggested for this supposed excessive poisonous action of the oily solutions was chosen, instead, for experimental investigation.

To test the solubility of phosphorus in hypophosphorous acid, a fifty per cent. solution of the latter was obtained from Professor Markoe, of the Massachusetts College of Pharmacy, and weighed masses of phosphorus, scraped free from oxide, were exposed to the action of carefully weighed and measured quantities of this solution for periods varying from one to four days, at the temperature of the room, and once, for an hour, at the temperature of 60° C. The phosphorus and the solutions were then re-weighed, but did not appear to have lost or gained in the least degree, except in one experiment, where the phosphorus appeared to have lost weight without the solution having gained, a result which for other reasons was due, as I was convinced, to a blunder in observation. It may be mentioned further that hypophosphorous acid did not appear as a solvent of phosphorus in a reliable dictionary of solubilities to which I had access through the kindness of Professor Markoe; and moreover that Personne, in the statement referred to above,[1] speaks not of hypophosphorous but of phosphorous acid.

To test the poisonousness of hypophosphorous acid, small quantities of the fifty per cent. solution, generally diluted from two to four times with water, were injected under the skin of frogs. It was thus found that two tenths of a cubic centimetre of the fifty per cent. solution would destroy life within twenty-four hours. Not much pain was caused by the injection itself, but the skin for some distance around became blanched, almost immediately, to a pale-blue color, and after death this, as well as the muscles beneath, was found softened, and sometimes — in cases of longer duration — either actually destroyed or (at least the muscle)

[1] Quoted from Gubler, Bulletin Générale de Thérapeutique, 1873. The original report of Personne is not referred to, and could not be found.

thickened and covered with a deposit resembling tough, coagulated lymph. The heart was found distended with blood.

Eight hundredths of a cubic centimetre of the same solution failed in the first experiment to kill in two weeks, though the frog remained in rather a depressed condition. At the end of that time it was killed, and marked local changes, such as those described, were found. Of two other frogs which received the same amount (0.08 c. cm.), one died after two days; the other was moribund on the fifth day. The solutions in which the phosphorus had been soaking were then given in the same dose (0.08 c. cm.) to two frogs, with results not differing materially in any respect from those just recorded.

It will be observed that if we calculate from the results of the frog experiments the dose necessary to produce analogous results in man, following the ratio of their weights, we find it to be a number of drachms at least, an amount which seems ludicrously large when we reflect that each fluid drachm of the fifty per cent. solution of hypophosphorous acid corresponds to fifteen grains of solid phosphorus.

Thinking that the poisonous action of hypophosphorous acid might perhaps be due to its acidity alone, I injected the same quantity of sulphuric acid, of about the same neutralizing power, but found that although the primary irritation was very much greater and of much longer duration than in the previous experiments, neither the constitutional nor the local inflammatory effects were nearly so great; in fact, they were almost or quite zero.

If, then, Dr. Thompson's theory is incorrect, we are left with the cause of the occasional unexpectedly poisonous action of phosphorus still as obscure as before, and must continue to use the drug cautiously and with suspicion.

We may add that in other parts of his book Dr. Thompson seems to approach his subject not in the critical spirit that every writer upon therapeutics should feel bound to exhibit, but rather in that of a partisan for his own opinions.[1]

RECENT PROGRESS IN THERAPEUTICS.

BY ROBERT AMORY, M. D.

Jaborandi.[2]— The action of this drug has been explained by M. Gubler as follows: Jaborandi acts directly upon the cells in the salivary glands. From the very moment of its ingestion, these secretory cells are excited, and immediately a stimulation of the distal ends of the centripetal nerves ensues. This stimulation is transmitted to the reflecting centres,

[1] The experiments above recorded were performed, through the kindness of Professor H. P. Bowditch, in the physiological laboratory of Harvard Medical School.

[2] See the JOURNAL for September 16, 1875; Revue des Sciences médicales, vi. 590; Baier ärtzliches Intelligenz-Blatt, xii. 16; Berliner medicinische Wochenschrift, xii. 18.

whence it returns to the glandular vaso-dilator nerves (*vaso-dilatateurs glandulaires*), whose function of keeping the vessels in a state of contraction then ceases, and these latter distribute to the secreting organs all the liquid demanded by their increased activity. M. Vulpian offers an objection to this theory on the ground that jaborandi is probably eliminated by the liver, and not by the salivary glands. This objection is based on the analyses made by E. Hardy. Other objections to the theory of M. Gubler are derived from physiology: after section of the lingual nerve above the place where its filaments are sent off to the glands, and again, after section of the pneumogastric nerve and of the cervical ganglion at the base of the skull, M. Carville has seen jaborandi produce a secretion of saliva from the submaxillary gland in as active a manner as in those experiments with these portions of the nervous system intact. Neither reflex vaso-dilating excitation nor the influence of the nervous system is necessary to induce the flow of saliva from the submaxillary glands. M. Vulpian attributes the flow of saliva and sweat to the fact that jaborandi paralyzes in the salivary and sudoriparous glands the distal end of the fibres coming from the sympathetic nerve.

Mr. Langley describes the action of jaborandi on the heart in the following words:[1] "If a few drops of the glycerine solution, or if one of the extracts, be injected under the skin of a frog or toad, the heart will become red and dilated, and the beat slower. These characters increase till the heart is of a dark red color, very much distended in diastole. I have invariably found that the ventricle stops beating before the auricles. According to Vulpian,[2] the auricles are the most readily affected; this certainly is not the case if it be taken to mean that the auricular beats are the first to cease. It does, however, not unfrequently happen that the auricles are the first to show the effects distinctly, beating only in every alternate heart-cycle. This has been most frequently observed after the aqueous extract has been given. At a later stage the heart-beats generally become very irregular, at one time the auricles contracting only in every alternate heart-cycle, at another the ventricle, then perhaps a complete stoppage of both occurring, followed by a few normal beats. Moreover, in point of energy the different parts of the heart-beat seem to be independent of one another; at one time the auricles contract feebly and the ventricle strongly, at another exactly the contrary. But with all these variations the ventricle has always in the many animals I have examined been the first to finally cease contracting. . . . Atropia sulphate quickly restores the heart-beat, but with less and less readiness as the heart has been stopped for a longer time. The restored beats are at first feeble, then get

[1] Journal of Anatomy and Physiology, October, 1875, page 187.
[2] London Medical Record, July, 1875.

stronger till an almost or quite normal beat takes place. The auricles show this effect most strikingly, and not unfrequently the auricular beat will be resumed on injection of atropia sulphate, but not the ventricular."

The preparations of this drug used by Mr. Langley contained alcohol and glycerine; and, in order to prevent any misunderstanding in regard to the effects induced by these preparations, he eliminated from his results the effects which were caused by administering alcohol and glycerine alone. He remarks also that the aqueous extract of the alcoholic residue appears to have all the properties of the alcoholic extract.

Having shown by his experiments that there is an initial exalting influence of the inhibitory action of the sympathetic nerve after the exhibition of this drug, and that this is succeeded by exactly the contrary, or a paralyzing effect, Mr. Langley offers a partial explanation of these contradictory results, and suggests that the alkaloid pilocarpine is not the only substance which contains the active principle of jaborandi, because this exalted inhibitory action of the sympathetic nerve on the heart's pulsation does not follow the use of nitrate of pilocarpine. "Nor is there any stoppage of the heart's action by an increased stimulation of the pneumogastric [by means of a Du Bois Reymond induction coil], if the strength of the shocks be increased. Two or three drops of a five per cent. solution of nitrate of pilocarpine are sufficient to produce this state. Further, it will be found that stimulation of the sino-auricular line will no longer stop the heart. Here then we have a substance which, as it is usually expressed, paralyzes the inhibitory fibres of the pneumogastric. Now this substance is contained in jaborandi in very small quantity, and consequently, when jaborandi is given, the pilocarpine contained in it requires some length of time before it can produce its proper effects; hence it is not until a late stage that we find the inhibitory fibres paralyzed."

Experimenting still further by placing an extract of jaborandi in direct contact with different portions of the heart tissue, Mr. Langley observed that the muscular tissue thus in immediate contact with the extract ceased its efforts at pulsation and became pale and contracted. This tonic contraction ensued after the topical application of the aqueous as well as of the alcoholic extract, and consequently could not be attributed to the action of alcohol. Moreover, after wiping away the jaborandi extract from the ventricle, after this phenomenon had been observed, and then sponging that organ with atropia solution, "its pale, contracted condition gave place to one of flaccidity." Reasoning upon the basis of his own experiments and of those by Vulpian on striated muscular fibre, Mr. Langley rejects the theory that jaborandi acts through the pneumogastric or any other nerve-fibres, and proposes as a simpler theory "that jaborandi (and therefore of course atropia also)

acts directly on the whole neuro-muscular cardiac tissue, in what exact manner must be left for future inquiry."

Some of the practical points of the effect upon the circulation derived by Mr. Langley from his experiments are as follows: "Jaborandi, in whatever form injected, causes a slowing of the rate of heart-beat (whether the vagi are cut or no) and a fall of blood-pressure.

"The fall of blood-pressure does not depend solely on the lessened rapidity of the heart's beat. By injecting slowly, often the first effect visible is a fall of the blood-pressure without an appreciable slowing of the pulse. The fall then resembles in a remarkable degree that caused by stimulation of the central end of the depressor. . . . Moreover, when atropia is given, the blood-pressure does not rise to its former level, although the rapidity of beat be restored. Jaborandi given after atropia still causes a fall in the blood-pressure, though not so considerable as in the absence of atropia."

Dr. Craig states [1] that erroneous impressions prevail as to what portion of the drug contains the active principle; Rabuteau, of Paris, concluding that it resides in an alcoholic residue from an aqueous solution, and Mr. Martindale attributing it to the "dregs" (pieces of the stem, leaves, and petioles), the strained solution producing but little effect. Dr. Craig had prepared for his use in clinical experiments a substance called pilocarpine; but he does not give the method of its preparation. This substance, he says, "is of a semi-fluid consistence, of a yellowish color, and possessed of an agreeable odor. It is soluble in water, and is very active. One grain of this pilocarpin is nearly as active as one drachm of the leaves." Dr. Craig used small doses of the infusion every few hours, and in several cases of fever characterized by a dry tongue and a parched mouth he was enabled to restore the flow of saliva and to keep the mouth and tongue moist. "He has never found jaborandi affect much either the heart's action or the temperature of the body, and he has watched carefully for the disturbance of the vision observed by Mr. Martindale and others, but as yet has failed to observe it. He believes that many of the untoward results ascribed to jaborandi are due to the fact that dregs have been swallowed in addition to the strained infusion."

Dr. Craig believes it to be a very valuable drug for removing pleuritic effusions.

According to MM. Bochefontaine and Galippe, the bark is the most active portion of jaborandi. MM. Hardy [2] and Vulpian [3] also note that the active principle of the plant is an alkaloid which can easily be separated from an infusion of the leaves and bark. This alkaloid, pilo-

[1] Edinburgh Medical Journal, January, 1876.
[2] Gazette médicale, iv., 1875, page 309.
[3] Le Progrès médical, 1875, page 229.

carpine, may be isolated by means of phospho-molybdic acid, or by ammonia. Hardy and Vulpian found that its effect on the heart and salivary glands was similar to that caused by the infusion of the stems and leaves of jaborandi. The proportion of this alkaloid in jaborandi is but 0.75 per cent.

Cholagogue Action of Aloes, Podophylline, Rhubarb, Calomel, and other Cathartic Medicines. — In the report of a committee of the British Medical Association in regard to the amount and character of the bile which flowed from permanent biliary fistulæ in dogs that were subjected to a fixed diet and to the administration of various substances, it is stated [1] that "spontaneous diarrhœa, dysentery, and purgation, produced by pilula hydrargyri, calomel, corrosive sublimate, and podophylline, always diminished the solid constituents of the bile, and, with one exception, the fluid portion of the bile also."

Röhrig [2] observed that in fasting animals subjected to the calming action of curare, croton-oil in large doses increased the secretion of bile, and that colocynth, jalap, aloes, rhubarb, senna, and magnesia sulphate likewise had some effect in increasing the flow of bile, the amount of influence from each being in the order above stated; moreover, the use of calomel rather tended to promote the flow of bile if given during the secretion, but would not originate the secretion after it had ceased. In commenting upon these results Dr. Rutherford and M. Vignal [3] observe that "Röhrig's statement with regard to calomel does not much differ from that made by Hughes Bennett's committee, and he made no experiments with podophylline and taraxacum, nevertheless, he did find that certain purgative agents, when given to animals that are fasting, increased the biliary secretion, while the committee found that in non-fasting animals, purgative action induced by podophylline, calomel, etc., diminished the amount of water and solids of the bile secreted in the twenty-four hours."

Not being satisfied with the condition of the subject, Dr. Rutherford, who was the reporter of the committee of the British Association, has performed, with the aid of M. Vignal, some additional experiments upon dogs that had in nearly every instance fasted about eighteen hours. These animals were curarized and artificial respiration established, after which the abdomen was opened along the linea alba, and a glass canula inserted into the biliary duct near its junction with the duodenum. The bile was then allowed to flow into a fine cubic-centimeter measure, and a record was kept of the quantity secreted every fifteen minutes. In many cases this bile was analyzed, and the alimentary canal was examined post mortem. The errors which are liable to occur from

[1] British Association Report, 1868, page 229.

[2] Experimentelle Untersuchungen über die Physiologie der Gallenabsonderungen, Stricker's Jahrbücher, 1873, page 240.

[3] Journal of Anatomy and Physiology, January, 1876

mechanical obstruction to the flow of bile or from an irregularity in the movements of artificial respiration were eliminated as carefully as possible. Curare was used on account of its property of paralyzing voluntary movements, and with proper care and doses the biliary secretion was not apparently affected by this medicinal agent. As a still further caution, the animals were allowed to recover from the surgical operation, before the regular record was taken. The curare solution (one minim to each milligramme of water) was always injected into the jugular vein.

Controlling experiments upon the curarized dogs, in which no other medicine was administered, were first made in order to establish the proper rate of secretion and the character of the bile. It is to be noted that in these experiments the composition as well as the quantity of the bile was nearly constant. The results of the experiments on the various cholagogues may be thus summarized: —

(1.) *Croton-oil* in almond-oil (fifteen grains to sixty minims, six grains to sixty minims, three grains to sixty minims) showed very little, if any, increase in the amount of bile secreted during two or three hours after its injection into the duodenum. In the experiment with the largest dose, the autopsy revealed impending purgation in the small intestines, whilst in that in which the smallest dose was given there was no evidence of purgation.

(2.) *Water* injected into the duodenum appeared to have no effect upon the biliary secretion.

(3.) *Podophylline* in an aqueous solution (of a strength varying from six grains in nine centigrammes of water to ten grains in ten centigrammes of water) caused an increased flow of bile, commencing one hour after the injection into the duodenum and attaining its maximum in three or four hours; but at the end of six hours the flow became perceptibly less. This drug produced an increased vascularity in the upper portion of the small intestine, and also other evidences of slight purgation. Presuming that the slight purgative effect was due to the insolubility of podophylline in water, other experiments were made with this drug dissolved in bile. This caused a very serious purgation, and a very rapid increase in the amount of bile, but in an hour and a half afterwards this increase was succeeded by a very rapid diminution. An analysis of the bile secreted after the podophylline showed that the especial bile-solids were not diminished, whilst the amount of mucus secreted was materially lessened. In short, the action of podophylline may be summarized thus: (1.) When injected into the duodenum of a fasting dog, it increases the secretion of bile. (2.) "When the bile is prevented from entering the intestine, podophylline acts less powerfully and less quickly than when bile is introduced." (3.) A severe purgative action diminishes the amount of bile secreted. (4.) Purgation

from podophylline is probably due to a local action. (5.) "The bile secreted under the influence of podophylline, although it may be in increased quantity, contains as much of the special biliary matter as bile secreted under normal conditions."

The action of *aloes* was as follows: "(1.) Sixty grains of the extract of Socotrine aloes, when placed in the duodenum, powerfully stimulated the liver. (2.) Under its influence the liver excreted a greater quantity of biliary matter in a given time, although the bile was rendered more watery. Coincident with the marked action on the liver, there was only a slight purgative action."

Rhubarb was shown to be a very remarkable hepatic stimulant, doses of from seventeen to thirty grains never failing to increase the biliary secretion within half an hour after administration, and that far less intestinal irritation occurred than after the use of aloes and podophylline. The percentage-amount of the special biliary matter was not diminished by rhubarb.

Senna was shown to be less powerful than rhubarb as an hepatic stimulant, and rendered the bile more watery.

Colchicum acted as a hydro-cathartic, and increased the amount of biliary matter excreted by the liver, but rendered the bile more watery.

Taraxacum and *scammony* were very feeble hepatic stimulants.

Calomel gave the following results: "(1.) An increase of the biliary secretion followed the administration of two successive doses of ten grains of calomel in one case. Diminution of the secretion was the only result of the same doses given under similar circumstances in two other cases, and it was the most definite result of the administration of four successive doses of three grains in another case. (2.) In all the four experiments the calomel had a purgative effect. (3.) Analysis of the bile secreted during calomel-purgation showed that notwithstanding a diminution in the quantity of bile secreted, the percentage-amount of solids had become less."

Gamboge, a hydro-cathartic, diminished the secretion of bile, thus acting in a contrary manner to colchicum, which is also a hydro-cathartic.

Castor-oil has scarcely any effect on the hepatic secretion, and this result was similar to that obtained by Röhrig.

Thus it will be seen that podophylline, rhubarb, aloes, and colchicum are the most active stimulants of the dog's liver; and, moreover, Dr. Rutherford states that "the increased discharge of bile was not owing to contraction of the gall-bladder, for this in all cases had been well-nigh emptied by digital compression, after which the cystic duct was clamped at the beginning of the experiment." In comparing these experiments on fasting animals with the experiments of Hughes Bennett's committee on non-fasting animals, Dr. Rutherford further states that

the above substances excite the liver to secrete more bile. If purgation result, the absorption of biliary matter and of food — if digestion be taking place — from the intestine is probably diminished. Thus by the twofold operation of increased hepatic action and diminished absorption of biliary matter from the intestine, the composition of the blood as it passes through the portal system is probably rendered more pure. He moreover suggests a point of great practical interest: namely, "That powerful purgative action tends to diminish the biliary secretion." It must be borne in mind that the foregoing experiments directly apply to the healthy dog only.

(*To be concluded.*)

SEGUIN'S MEDICAL THERMOMETRY.[1]

In 1871 a book bearing the same title as the work here noticed was published in New York as the joint production of C. A. Wunderlich and E. Seguin. In the new form the name of the distinguished German is omitted from the title-page The work is larger by one hundred and sixty pages than its predecessor. The reader, whom we will suppose to be unfamiliar with this former edition, learns from the short preface that this "much-demanded second edition will be found to contain the material to which the success of the first was due; the restoration of old observations containing germinal truth yet undeveloped; the latest thermic experiences that could be gathered to date," etc.; and, finally, that "by the force of its documentary evidences this book is from Wunderlich, Roger, S. Ringer," and fifteen other eminent German, French, and English investigators, but that "by its unity of plan and by the convergence given by its documents towards a Hippocratic renaissance," Dr. Seguin is "bound not to decline the authorship."

However zealous and good-natured the reader may be, he cannot get far into the first of the two great divisions of the book, Human Temperature, without having his patience sorely tried by the language — certainly not English — and by the frequent obscurity and false taste of the style. Let the following serve as specimens. "Infantile temperature is from the beginning subject to so many causes of versatility that few robust men could stand it. Then its changes of type about the seventh day, an inward danger added to the external casualties which make its study dramatic from thence, at least till the seventh year. But above this artistic impression the humane one suffices to raise our interest to the pitch of devotion." Again, after speaking of the fact proved by Gavarret, that, if the working man spend more heat than his food, etc., can furnish, sooner or later his temperature will fall below normal, and he will be left without reaction, the author goes on, "Therefore, whoever appropriates to himself the equivalent in produces of this sacred 37° C., the norme upon which every one without exception ought to live, eats up in frac-

[1] *Medical Thermometry and Human Temperature.* By E. Seguin, M. D. New York: William Wood & Co. 1876.

tional equivalents the thermal substance — calories — of his fellow women and men. With this difference, however, that the direct anthropophagist is contented with a few pounds of human flesh, but the civilized anthropophagist consumes night, and day, thousands of calories which are others' life." Such words as "conceps," "desaggregation," "limitate," "internotion," "deperdition," occur here in every page.

If the undaunted reader holds out until the seventh chapter, he will be rewarded by finding the style become more temperate and less rhetorical, the new-coined words scarcer, and the valuable facts more numerous. Cheered up, he reads through several chapters on changes of temperature, their causes, types, and meaning, with entire surprise at the alteration for the better in the book. This feeling increases, as he peruses the chapter on the course of febrile temperatures, to an uncomfortable suspicion, which becomes almost a certainty when he passes on to the chapter on temperature in special diseases and looks at the typical curves of each disease. He goes to one medical neighbor and borrows Wunderlich's *Eigenwärme*, to another for Woodman's translation of the same, and finds that about half of this book (not counting the appendix), and that the better half by far, is taken almost verbatim, though a little condensed and rearranged, from the latter work. To be sure, Wunderlich is often, and always admiringly, alluded to, but in such a manner that no person who did not know his book would dream what use had been made of it. Of the fever-curves, which are more than seventy in number, nearly three quarters are taken from Wunderlich's beautiful charts, with little or no acknowledgment. Here and there observations of other experimenters, or an original comment or statement, are sandwiched in between Wunderlich's sentences.

"Apparent rari nantes in gurgite vasto."

At the end of the first chapter (historical and mainly from Wunderlich), Dr. Seguin calls Wunderlich the "hero of medical thermometry," and gives great credit to him for the "first demonstration of some laws of ustion in disease." The last thirty pages of Part I., devoted mainly to temperature in pyretic and in nervous diseases, and in diseases of senility and extreme infancy, have more original matter; authorities are quoted and borrowed curves acknowledged. A few pages at the end are given to unsatisfactory discussion of the regulation of animal heat, and last of all comes this dictum. "Calor is the ultime perceptible phenomenon between 'to be and not to be.'" "La chaleur, c'est la synthèse."

Part II., on Human Thermometry, seems to be original, and is a very earnest plea for the use, or, as the author would say, the *revival* (Hippocrates and his school took temperature by the hand), of the clinical thermometer in the family and school as a constant guide and referee. Dr. Seguin deplores the three varying scales of Fahrenheit, Réaumur, and Celsius, and naïvely proposes a fourth, "the physiological," invented by himself, having its 0 at 98.6 Fahr. He offers rather confusing blanks to busy mothers to fill out daily with figures for the doctor, but does not make out a strong case for these instead of the admirable method of fever-curves in use in most hospitals.

The book ends with fifty pages of appendix of valuable tables of temperature, collected from various writers, and with a very large bibliography.

The part contributed to this book by the "author" is the least valuable, though much precious matter has been collected. Were it not for the wrong done to Wunderlich by the omission of his name from the title-page, it would be pleasant to see this mark of almost youthful energy in a physician far advanced in years, in a cause so vital as the study of human temperature.

KOBER'S URONOLOGY.[1]

THIS is a pamphlet of one hundred and seven pages, reprinted from *The Richmond and Louisville Medical Journal* for September, October, November, and December, 1874. It can be considered as specially devoted to neither the theoretical nor the practical part of the study of the urine, and there is no subject which is at all exhaustively treated from either the chemical or the clinical point of view. Sometimes the old chemical nomenclature is used and sometimes the new. Among the errors which occur may be mentioned the statement that microcosmic salt (ammonio-sodic phosphate) is one of the constituents of the urinary sediment, its crystals being found with those of triple phosphate in putrefying urine, and being affected in the same way by chemical reagents.

The method for the systematic analysis of the urine is by no means adapted for the physician's office, since many of the processes recommended require for their performance the facilities of a well-arranged chemical laboratory.

E. S. W.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. SWAN, M. D., SECRETARY.

DECEMBER 11, 1875. — The president, DR. HODGDON, in the chair.

Congenital Malformation. — DR. BROWN related a case combining a malformation of the foot and a distortion of the leg, which had been noticed in the same condition as now seen, at the time of birth. The child is eight weeks old, well nourished and fat, and apparently in perfect health. The mother is an American woman of the middle class, a primipara. The period of gestation had been entirely normal, and the course of life quiet and easy from the time of conception. The mother had experienced no shock, fall, or other accident with the exception of an apparently insignificant trip on the sidewalk a week before labor set in. At the period of gestation when a malformation might be supposed to have had its commencement, there was positively no disturbing circumstance. In the fall near the close of gestation, she had slipped and come down upon her hands, not striking on the abdomen. This fall had been followed by no ill result, and fœtal motion had continued as before.

[1] *Uronology and its Practical Applications.* A Guide to the Examination of Urine and its Diagnostic Value, with Extracts from the Works of the most Modern Investigators. By GEORGE M. KOBER, M. D., Member of the Clinico-Pathological Society and Medical Society of the District of Columbia.

She had been attended by a female physician, under whose care labor had occurred naturally, lasting seven hours, the head presenting.

The distortion consisted in an obliquity of the tibia and fibula inward at the junction of the middle and the lower third, the bones presenting every appearance of having been fractured, union taking place at an angle of nearly 45°. The angle was a sharp one, no bending of the bone such as might be looked for in a green-stick fracture being apparent in the limb at this or at other points. The lower fragment presented sharp spicula of bone which were easily felt beneath the skin. A slight amount of callus was present. The union of the fragments was entirely firm, and was stated to have been so at the time of birth.

The malformation consisted in an abnormal position of the foot, and in the absence of certain toes. The foot was so placed as to suggest a dislocation outwards, the articulating surface of the astragalus being beneath the outer malleolus. The ligaments at the ankle were very lax, and the astragalus and os calcis abnormally small, as was the case, indeed, with the whole foot. The two smallest toes were wanting, no vestiges or representatives being seen, and no cicatrix or dimple suggesting intra-uterine amputation at any period of fœtal life.

The questions of interest in the case concern the decision of the periods at which the various deformities took place, and, in like manner, the causes of the same. The malformations in the foot would seem to have occurred at an early date in fœtal existence, and to have been dependent on the causes usually determining such anomalies, whatever those may be. It seems safe, however, to assert that the distortion of the leg was due to fracture occurring during the last weeks of gestation. Had it occurred earlier a simple bending would have resulted, or a green-stick fracture, which would have given a different shape to the limb from that which it presented, whereas the angle was decided and sharp. The presence of the malformation and the distortion would seem to be a coincidence, depending on each other, perhaps, as showing a general condition of the system.

Dr. Fifield did not know of any published work that refers to these things. At the Royal Orthopædic Hospital, this summer, he saw a child with dislocation of both hips. Mr. Bernard Brodhurst said that these cases were not so very uncommon, and that they were frequently overlooked. Mr. Brodhurst stated his belief, well supported by facts, that such dislocations were not congenital, but were due to violence during delivery. In these cases it had almost always been found that the child had presented feet foremost, or that version or some other operation had been performed. Dr. Fifield spoke of two cases recently under his observation at the City Hospital. In one there was a dislocation of the hip on the pubes; the other, sent as a case of hip-disease, Dr. Fifield diagnosticated as a dislocation of the hip on the ilium. He measured and found an inch and a half shortening. The child had always been in the same condition. If this could be established, that these cases are not congenital but are due to some accident at the time of labor, it would be a very important decision. He questioned whether Dr. Brown's case should go on record as congenital.

Dr. Abbot asked if it were not possible that the apparent fracture were really simply a deformity, especially in view of other true deformities actually present.

Miscarriages in a Subject of Syphilis. — Dr. Forster read the following case: Mrs. L., thirty-one years of age, American, was married at twenty; she had always enjoyed good health with the exception of dysmenorrhœa. Soon after marriage she became pregnant, and when three months in that condition had an abortion performed; since then she has miscarried eleven times. Her pregnancies have terminated as follows: —

Second, at the seventh month, the premature labor being attributed to a blow upon the abdomen.

Third, at the seventh month, without any assigned cause.

Fourth, at the fifth month, after an attack of vomiting.

Fifth, at the seventh month, cause unknown.

Sixth, at the third month, being, as the patient says, "a false conception," and following a fall with a wash-tub.

Seventh, at the sixth month, after lifting a heavy overcoat.

Eighth, at the fifth month, cause unknown.

Ninth, at the seventh month, after a chill.

Tenth, at about the fourth month; membranes unruptured.

Eleventh and twelfth, at the sixth month.

With her fourth pregnancy cloasma of the forehead appeared, and still remains. After her sixth pregnancy she was treated for metritis and afterwards for a displacement, for which she wore a pessary for about two weeks; she has otherwise made good recoveries. She has had no symptoms of syphilis which I have been able to detect, other than these repeated miscarriages. Her husband acknowledges to have been treated for a venereal sore three years before his marriage, but has never had any secondary symptoms. I have been in attendance during the tenth, eleventh, and twelfth miscarriages. After the eleventh I placed both the husband and wife upon an anti-syphilitic treatment, but I fear it was not followed longer than a few weeks. Both parties are anxious for a living child, and are at present under treatment.

The fœtus and placenta have been examined by Dr. Fitz each time that I have been in attendance.[1]

Partial Placenta Prævia and the Site of the Placental Souffle. — Dr. Draper read the following case, to illustrate the value of the placental souffle as a diagnostic sign in placenta prævia. "Mary D., aged twenty-eight years, a primipara, was married June 8, 1874, within thirty-six hours after the cessation of a menstrual period. The catamenia did not recur, and the usual symptoms of pregnancy developed in due time. Morning sickness continued about two months, and was severe during that period.

"In September the patient slept one night in a freshly painted room. This exposure induced an attack of severe vomiting, which lasted twenty-four hours and produced considerable temporary exhaustion.

"In December she consulted me for the relief of a pain, neuralgic, intermittent, and, as she said, 'binding' in character, confined to the left groin and left lumbar region.

[1] See Journal of December 2, 1875, page 648.

"In the night of January 14th I was summoned in haste by a message that the patient was flowing. I found her in bed, anxious, but without much general disturbance. She stated that she had gone to bed at nine o'clock the previous evening, after a day of no more than the usual exercise or fatigue. She had been awakened at half past eleven by feeling her clothing wet; on examination she found that she was flowing. There was no pain nor any unusual sensations attendant on the hæmorrhage.

"On vaginal examination I found that the os would admit the index finger to its first joint, the lips of the os being thick, firm, and high up. Within the os, the finger came upon a pulpy, spongy mass. The patient was flowing somewhat at the time, but the examination did not increase the hæmorrhage, and it soon ceased altogether. At this time the patient was just entering the eighth month of pregnancy.

"At the visit the next day, everything was entirely quiet, and I determined to see if my fears would be confirmed by any signs afforded by auscultation. The walls of the abdomen were spare, and the souffle ordinarily called placental was unusually distinct. Indeed, it was possible to determine its limits with great exactness. It was loudest within and above the anterior superior spine of the ilium, in a line toward the umbilicus. It was quite distinct over Poupart's ligament and indistinct over the symphysis pubis. The sound shaded away, as it were, from the first-mentioned point of maximum distinctness. The fœtal heart-sound was heard just to the left of the umbilicus."

Six days after the first hæmorrhage, the patient had another, less severe; and three days later, another attack occurred, lasting two or three hours. About the first of February, three weeks after the first bleeding, the most urgent attack of all came, and during Dr. Draper's unavoidable absence the patient was delivered of a still-born fœtus by Dr. G. L. Underwood, by gradual manual dilatation and version. He found a partial placenta prævia, the placental site at its lower margin involving the os and covering it.

Dr. Fifield said that, so far as he knew, the existence of a placental souffle has never been denied, but there has been some difference of opinion as to the production of a similar sound by the presence of fibroids. Dr. Fifield asked whether the sound were so situated in the case reported as to determine the diagnosis.

Dr. Draper replied that the murmur was loudest at a point considerably lower than it is usually found.

Dr. Chadwick remarked that if the souffle referred to is of placental origin, it ought, in the vast majority of cases, to be most plainly audible over the fundus of the uterus, since the placenta is commonly found in that part of the uterine cavity.

Dr. Draper asked if there was not a marked difference in degree or pitch between the placental souffle and the sound caused by the presence of a fibroid tumor.

Dr. Fifield replied that the opportunities for careful comparison were rare, and that it was difficult to state positive differences. He referred the society to some observations on this subject made several years ago by Simpson.

Dr. Lyman spoke in this connection of a patient who was brought into the City Hospital in consequence of a sharp attack of acute dysentery. She was five or six months advanced in pregnancy. In this case the placental souffle was very low down, just over Poupart's ligament, and confined to a space not more than two inches in diameter. The patient had had no hæmorrhage, nor was any anticipated.

Dr. Fifield said that the placental souffle varied greatly in intensity at different times.

Dr. Boardman remarked that he had a case under observation at the present time which might perhaps illustrate the difference between the placental and the fibroid souffle. A patient with a large uterine fibroid furnishes a souffle more like the murmur which is afforded by a small aneurism, differing in pitch and intensity from the loud rushing sound of the utero-placental souffle, as commonly observed. Moreover, pressure on the tumor at several points and also in neighboring localities, notably upon the hæmorrhoidal vessels, conveys to the finger distinct thrills which suggest to the ear sounds similar to those heard by means of the stethoscope.

Dr. Chadwick raised the question whether the pitch and intensity of the sound would not vary at the different stages of pregnancy, and thus their value in the differential diagnosis of fibroid tumors and pregnancy be nullified.

Dr. Reynolds mentioned the fugitive and changing character of these sounds as reported by some observers, and the doubts expressed as to their diagnostic value on this account.

Subacute Cystitis following Parturition. — Dr. Richardson read an account of three cases of subacute cystitis following delivery. The paper was published in the Journal for February 3, 1876.

Dr. Fifield called attention to the caution given by Dr. George Johnson, in his work on the diseases of the kidneys, not to confound certain cases of cystitis with Bright's disease. Dr. Fifield had had himself, a few years ago, a case of cystitis produced by long exposure to severe cold; in that instance pus and blood-corpuscles occurred in the urine, together with albumen. The disease passed off without local treatment.

Dr. Boardman suggested that in the cases reported by Dr. Richardson the disease had arisen from the decomposition within the bladder of portions of the urine retained from time to time in consequence of partial paralysis, the result of long pressure upon the bladder during labor, the organ being thus rendered unable to empty itself completely.

Dr. Wellington said that Dr. Sullivan, of Malden, had recently reported to the Middlesex South District Medical Society two cases of women in whom cystitis with purulent discharge seemed to have been determined and maintained by the exhaustion resulting from lactation. When the children were weaned, the trouble ceased. Dr. Wellington recalled in his own practice two or three severe cases similar to those reported by Dr. Richardson. In these there was a large amount of pus in the urine, and a good deal of general disturbance. In one case the trouble followed a tedious labor terminated by instruments.

Dr. Fifield spoke of a case in which there was the production of cystitis,

with some pain, by anæmia from long-continued nursing, the symptoms ceasing when the child was weaned.

Menstruation as a Pathological Phenomenon. — Dr. Abbot remarked that the question of the true nature of menstruation and its relation to ovulation had of late been considerably discussed; and Professor King, of Washington, in a recent article in the *New York Medical Journal* had labored to prove that it is essentially a pathological phenomenon, the normal condition of a mature woman being either that of pregnancy or that of lactation. As bearing upon this question Dr. Abbot mentioned the case of a lady, the patient of a member of this society, whom he had attended in confinement during the past summer, in the temporary absence of her physician; her normal condition was that of catamenial irregularity.

It was the fourth confinement of the patient, and occurred ten months after the last catamenial period. The labor was short and comparatively easy. The health of this lady was exceptionally good. She was remarkably robust and vigorous, and had never suffered from backaches or other signs of uterine disturbance. She had never menstruated regularly, the intervals between her menstrual periods having generally been from three to six months, and only two or three times in her life so short as four weeks; the flow was painless. She has two sisters who are not in as perfect health as herself; they are subject to the exhibition of strongly-marked nervous symptoms, but possess a high degree of intellectual development, and are quite regular in menstruation.

Dr. Ingalls mentioned the case of a young woman who five years ago, at the age of twenty-five, consulted him with regard to menstruation. This function had never appeared. The patient was short, stout, healthy-looking, and had always been perfectly well. She was advised never to suffer any attempts to bring about the catamenia, so long as her health was unimpaired.

Is Absorption of Liquor Amnii possible? — Dr. Abbot said the question had been raised whether the liquor amnii can be to a great extent absorbed before the birth of the child. He had been called to a very delicate lady about being confined, whose condition was a source of some anxiety. One month before her confinement he had examined the abdomen with reference to the position of the child, and found a very large quantity of liquor amnii, while the child, small and very movable, was lying directly across. At labor, the head presented normally, and the amount of liquor amnii was considerably less than is often found in normal labors. The child weighed from eight to nine pounds.

Dr. Reynolds inquired for the particular signs of the presence of a large amount of liquor amnii.

Dr. Abbot replied, that the uterus was large, and the child seemed small and floated about very loosely, although the abdomen was not larger than is usual at that stage of pregnancy.

Dr. Reynolds said it seemed to him a very nice point of diagnosis. In such a case he would ask if a relaxed and supple condition of the uterine walls might not explain the symptoms attributed to an undue amount of liquor amnii.

Dr. Abbot answered that the uterus was not flaccid, but, on the contrary,

quite tense. He had seen other cases in which he had diagnosticated an excess of liquor amnii, which had been verified at the labor; and in one instance was complicated by the presentation of a hand and a foot. The apprehension of such an occurrence in the case reported led him to request that he might be called at the very first symptoms of labor.

Dr. Reynolds, in reviewing the case, remarked upon the facts of a fœtus not small, in an abdomen not remarkably distended, and yet the conviction on the part of the reporter that there had been a large amount of liquor amnii.

Dysmenorrhœa. — Dr. Minot reminded the society of certain cases of dysmenorrhœa relieved by valerianate of zinc, which he had reported at the meeting in April.[1] He desired to say that two of those cases had recently come under his notice, and in both the effect of the remedies appears to have been permanent. The dose administered was one or two grains, three times a day, beginning twenty-four hours before the expected catamenia. When begun after the pain has set in, the effect of the remedy has not been so good, but even then considerable relief has been afforded.

Dr. Cotting remarked that on hearing the report of Dr. Minot's cases he made immediate trial of the remedy in a very severe case, which had up to that time resisted all remedies prescribed for it. Its first effect was admirable, the patient suffering little or nothing on the first two occasions, but it gradually became as ineffectual as any other remedy tried previously in the same case.

Dr. Minot said that of course it was necessary to test a remedy repeatedly in order to ascertain its exact value, but the effect of the valerianate in the cases reported made it seem desirable to bring it to the notice of the society for a more extended trial.

In answer to a question, Dr. Minot stated that in one of the cases, that of a patient of nervous temperament, who had always extruded a membranous, shreddy mass with the menstrual flow, he had made a uterine examination, with the following result, as copied from notes made at the time: the uterus was low, with a slight inclination backwards, and tender; the sound entered without any difficulty, to the normal distance. There were no granulations or abrasions about the os.

Dr. Lyman added that he had prescribed this remedy soon after the report of Dr. Minot's cases: in one instance there was great relief the first time, and none subsequently; and in two other cases no effect whatever followed.

ANDRAL'S DEATH.

The great triumvirate of the Paris Medical School of forty years since, namely, Andral, Chomel, and Louis, has at length wholly passed away. Andral, the last survivor of the three, died very recently.

American medical students of former days who visited Europe for the purpose of learning what Europe could teach them, will well remember all three of these noble specimens of manhood. Andral was justly considered the most

[1] Journal, August 12, 1875.

accomplished professor of the school. Doubtless many still remember the admirable lectures he delivered during the winter of 1832–33 on diseases of the brain, and those on internal pathology in 1833–34. As they glance over their notes taken at the time they will be reminded of the scope of his intellect and likewise of his skill in the management of an immense medical class, composed as it was generally of an untrained set of youths, little disposed to pay respect except to real ability. It could pour out its contempt and even ridicule upon Broussais, who, while tottering with age, still boldly and at times almost fiercely defended his theories, which were beginning to fall under the influence of modern modes of scientific research, namely, those of close observation and of strict deduction from facts. Andral was the ablest and most delightful lecturer on these newer ideas at the school of medicine. Chomel was the great clinical teacher.

At that time no medical student would have thought of visiting any other place than Paris in order to finish his medical education. There were congregated young men from every country, as in earlier times they were found at Leyden, and as now at Vienna and Berlin. But Germany in 1832 was a *terra incognita* for medical students, as much as Russia or the far East would be to those of the present day.

Andral's lectures were full of learning, very carefully prepared, and methodically arranged. He seemed to have everything under his eye, and from his retentive and all-grasping memory he could marshal fact after fact in elucidation of any subject to which he called our attention. And he did this so easily and so admirably that he charmed every one in the vast amphitheatre of the school of medicine. Entire silence prevailed the instant Andral commenced speaking. No student ever thought of interrupting him.

He was the intimate friend of Louis and of Chomel, and while independent in the expression of his own views and the use of his own methods of teaching, he was, like Chomel, a firm supporter of Louis' numerical method of study. He had, however, what Louis lacked, namely, a winning eloquence of language, and a more generalizing habit of mind, which with his vast resources of acquired learning made him unequaled as a professor of medicine. The great influence which Louis' strict method had over him was quite perceptible. Had Andral been born a century earlier, amid the medical ideas then prevalent, he would have been eminent as a great system-maker, as Boerhaave and so many others had been. Swayed as he was by Louis, he had immense influence for good over the youths before him. When he died we lost one of our greatest and noblest teachers.

Andral was born November 6, 1797. In 1821 he presented his thesis and received his medical degree. He rose rapidly in reputation, and in 1828 was elected to the professorship of hygiene. In 1836 Des-Gennettes was restored to the chair of hygiene, and Andral was called to that of internal pathology. In 1839, at the death of Broussais, Andral succeeded him in the chair of general pathology.

In 1823 he was made member of the Academy of Medicine, and in 1843 was elected to the Academy of Sciences.

His various published works will always remain as monuments of his fame.

Among them are his Clinique Médicale; his Digest of Pathological Anatomy; a Treatise on Mediate Auscultation, and one on the Heart; three volumes on Internal Pathology; and finally, several years after the above were published, he and Gavarret printed their Researches on the Blood.

In 1866 his wife, the daughter of the celebrated Royer-Collard, to whom he was tenderly attached, became seriously ill and suffered greatly. For her sake he resigned his extensive practice in Paris and retired to Château Vieux, and there for the remainder of her invalid life he devoted himself with entire self-abnegation to her comfort and consolation. She died only a short time ago, and her husband has soon followed her. These last years of his life seem to those who knew him in the days of his early manhood and of his fame as a most fitting termination of his life. They seem appropriate, and what might have been anticipated from all that was known of him as a public lecturer or private friend.

As the *France Médicale* (from which journal we draw some of the above data of his life) justly says when referring to his death, "He was full of tact, of goodness, and of dignity. He was sought for by all his professional associates for these qualities and because of his accuracy of judgment and wise treatment."

He died on Sunday, February 13, 1876, aged seventy-eight years. "His death produced a profound sensation in all professional and scientific circles of Paris." The Academy of Medicine adjourned immediately after receiving the announcement of the fact. At his funeral a large crowd of savans, of officers of the state, of physicians and students, assembled to pay due honor to one of the greatest medical minds this century has seen.

MEDICAL NOTES.

— The reception held at the rooms of the Medical Library Association was attended by a large number of physicians of this city and its suburbs. The number of volumes at present in the library amounts nearly to three thousand. A portion of these are loans from societies, the rest being gifts from private libraries. There are also from sixty to seventy files of medical journals which are received regularly and promptly. The larger portion of the books are sets of the best English, French, German, and American journals. The rooms of the association consist of a library and reading-room. They are pleasantly situated, and in a very accessible portion of the city. Steps are being taken to obtain an act of incorporation. The association is especially indebted to the Society for Medical Observation, whose library has been deposited with them, and also to Dr. William Read for his library of obstetric works, which is almost complete in the English literature of the subject. Books have also been received from a large number of other physicians. All physicians living beyond a radius of twenty miles from the city are invited to become the guests of the association when visiting the city. The library promises to become a very valuable one.

LETTER FROM BALTIMORE.

[FROM OUR OWN CORRESPONDENT.]

MESSRS. EDITORS, — With the end of February come the commencements of our medical colleges, of which Baltimore has its share, numbering now four, namely, the Medical School of the Washington University, that of the University of Maryland, the College of Physicians and Surgeons, and last, but not least, the Medical Department of the Johns Hopkins University, which is rather a thing of the future than otherwise, as the university was founded only the day before yesterday. The school of medicine of the Washington University held its ninth annual commencement yesterday, when the degree of doctor of medicine was conferred by Dr. Charles W. Chancellor, President of the State Board of Health, upon thirty-two graduates. The ceremony took place at Ford's Grand Opera-House. The dean, Dr. James E. Lindsay, presented his report, attesting the continued and increasing prosperity of the university. He referred to the new building that had been erected during the last year as giving better anatomical rooms and five additional wards. Since March 1, 1875, one thousand and twenty patients had been treated in the hospital, six thousand two hundred and six in the general dispensary, and one thousand and fifty-one in the dispensary attached to the school, making a total of eight thousand two hundred and seventy-seven sick and wounded, many of them without money or friends. During the year seventy students have been instructed, and of that number thirty-two had graduated. The hospital, he said, had at all times a skillful physician and surgeon, with trained assistants, and improved appliances to succor those who from sudden and violent illness or from injury stood in need of prompt medical or surgical attention, irrespective of condition, color, or religious belief.

The inauguration of the Johns Hopkins University took place on Wednesday, February 23d, at the Academy of Music. The auditorium was filled from orchestra to gallery, the entrances and lobbies being blocked by the immense concourse that assembled to witness the imposing exercises. Upon the stage sat the dignitaries from different parts of the United States, prominent among whom were Governor Carroll of Maryland, Mayor Latrobe of Baltimore, Honorable Judge Gilmor, President of the College of Physicians and Surgeons, the trustees of the Johns Hopkins University, the city council, President Eliot of Harvard University, President Cattell of Lafayette, President White of Cornell, President Pownell of Delaware, President Laws of the University of Missouri, President Garnett of St. Johns, President Magill of Swarthmore, President Welling of Columbian, President Hilgard of the American Scientific Association, Professors Dall and Gill of the United States Coast Survey, Professor Abbé of the Signal Service, Professor Eaton of the National Bureau of Education, Professor Marsh of Yale, and many others from the different seats of learning throughout the land. The Philadelphia press was represented by George W. Childs. Among the physicians present were Prof. Alan P. Smith, Prof. W. E. A. Aikin, Dr. James A. Stewart, Health Commissioner, Dr. J. J. Chisholm, Director of the Maryland Eye and Ear Institute, Dr. George Halsted Boyland, Dr. Thomas Opie, and Dr. Lewis H. Steiner. The stage was made to represent a library, the rear being occupied by the Peabody orchestra.

The salutatory was delivered by President Eliot, of Harvard, whose finished oratory and beautiful writing were decidedly the event of the day. President Gilman responded in a lengthy address, explaining the plans to be adopted in the organization of the different departments; it is proposed to follow, to a certain extent, the German university system, borrowing some ideas from the French also. With reference to the sciences of medicine and biology, he thought that it was imperative that some vigorous steps be taken, in consideration of the facts that our provisions for medical instruction cannot compare with those of European universities; that our medical schools have been inadequately endowed; that the system of fees for tuition has led to great abuses; that in some of our very best colleges the degree of doctor of medicine can be won in half the time required for the degree of bachelor of arts; that there is a disposition to treat American diplomas as blank paper by civilians at home and by the professions abroad; that ignorance and quackery vaunting diplomas are prevalent, and that medical degrees conferred by a bogus university are openly sold like patent pills. Then, turning to the other side of the picture, when we see what admirable teachers have given instruction among us in medicine and surgery, what noble hospitals have been erected, what marvelous discoveries in surgery have been made by our countrymen, what ingenious instruments they have contrived, what humane and skillful appliances they have provided on the battle-field, what measures are in progress for advance in hygiene and the promotion of public health; when we see what success has attended recent efforts to reform the system of medical education, we need not fear that the day is far distant. We may rather rejoice that the morning has dawned which shall see endowments for medical science as munificent as those now provided for any branch of learning, and schools as good as those which exist in any other land.

It will doubtless be some time after the opening of the university before the opening of the hospital, and this interval may be spent in forming plans for the department of medicine. President Gilman urges the importance of instruction antecedent to the study of medicine; such instruction is avoided by students ordinarily, as a glance at the catalogue will prove. He advocates a course similar to that begun at the Sheffield School, New Haven, but more extended. Such a course should include abundant practice in the laboratories of chemistry, zoölogy, and physics; the study of anatomy, physiology, and palæontology, and of the lower forms of life; the investigation of the principles of drainage and ventilation, and of climatic or meteorological laws; the geography of diseases, with the remedial agencies of nature.

Indeed, President Gilman does not insist too strongly on a scientific training preparatory to the study of medicine. He advocates such facilities as are now afforded, for instance, by Huxley in London, Rolleston at Oxford, Foster at Cambridge, Leukart, Kolbe, and His at Leipzig, Hoffmann and Reichert at Berlin.

It is proposed to make the medical department independent of students' fees, thus avoiding the temptation to bestow diplomas upon unworthy candidates. The fund is ample for this, nearly eight millions being bequeathed, to be distributed as follows: $3,500,000 for the university, $3,500,000 for the hospital, and the balance to local institutions of education and charity.

BALTIMORE, *February* 25, 1876.

COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING MARCH 4, 1876.

	Estimated Population.	Total Mortality for the Week.	Annual Death-Rate per 1000 during Week.
New York	1,060,000	651	32
Philadelphia	800,000	362	23
Brooklyn	500,000	261	27
Boston	342,000	197	30
Providence	100,700	30	15
Worcester	50,000	9	9
Lowell	50,000	14	15
Cambridge	48,000	24	26
Fall River	45,000	20	23
Lawrence	35,000	18	27
Lynn	33,000		
Springfield	31,000	8	13
Salem	26,000	13	26

Normal Death-Rate, 17 per 1000.

Boston Society for Medical Observation. — A regular meeting of the society will be held on Monday evening, March 20th, at eight o'clock, at the hall in Temple Place. Reader, Dr. J. O. Green; Subject, Case of Abscess of the Brain.

Will the writer of the anonymous communication signed "A." please send us his name as a guarantee of his good faith? — Eds.

Books and Pamphlets Received. — Report of the Health Officer of the City of Oakland for 1875. George E. Sherman, M. D.

Report of the Board of Managers and Superintendent of the State Lunatic Asylum of Texas for 1875.

Annual Report of the Directors and Medical Board of St. Michael's Hospital, Newark, New Jersey.

Transactions of the Colorado Territorial Medical Society at its Third and Fourth Annual Sessions. Denver, 1876.

Outline Drawings of the Figure for Recording the Situation and Form of Cases of Skin Disease, and for Noting their Progressive Changes under Treatment. Arranged by Balmano Squire, M. B. Lond. London: J. and A. Churchill. 1876.

Messrs. Editors, — In reviewing the clinical report of cases at the Massachusetts General Hospital, printed in your issue of February 24th, a query arises in my mind concerning which I desire information. Please do not think I am criticising, and if possible do not regard my question as puerile.

In the case of "depressed fracture of the skull," it is stated that "one of the fragments of the inner table had made a minute puncture in the dura mater, through which there was a slight oozing of a clear fluid." Taking this in connection with the possibility of a like injury to the pia mater, with the "vomiting and restlessness . . . during the first four days after the operation," and with the special symptoms manifested on the third, fourth, and fifth days, were any hints offered thereby pointing to a free opening for the escape of those morbid fluids which subsequently showed themselves? Of course the light shed by post-mortem examinations is good in some cases, but one would prefer a light more available for the welfare of his living patient when possible, and therefore I ask for information to guide me in a similar case, if I have the fortune to be called to one. Does not the history of such instances suggest that free drainage is the only safe method to avoid both the formation and the accumulation of pus?

Dulcamara.

March 2, 1876.